Claim Amendments

We claim:

1. (Currently amended) A method for signal processing comprising:

performing a first fast Walsh transform on a first set of magnitudes to obtain a result;

modifying the said result to obtain a first modified result;

performing at least a second fast Walsh transform on the said first modified result to obtain a second modified result;

where modifying the said result comprises:

storing a result of said performing a first fast Walsh transform in a first register;

comparing each magnitude comprising said result of performing said at least a first fast Walsh transform to a threshold value; and

replacing each magnitude of said stored result of performing said first fast Walsh transform that is greater than said threshold value with a zero to obtain a first modified result ~~and wherein n is a number of fast Walsh transforms performed and is equal to log N, where N is the number of valid traffic channels~~.

Claims 2-40 (canceled)

41. (Currently amended) An apparatus for interference cancellation, comprising:

means for receiving a signal;

means for despreading the received signal ;

means for performing carrier phase recovery on the despread signal;

means for performing at least a first fast Walsh transform on the despread carrier phase recovered signal to obtain a first set of transformed values;

means for modifying the said first set of transformed values to create a first modified set of values; and

means for performing at least a second fast Walsh transform on said first modified set of values to create a second modified set of values, further comprising:

means for storing an interference vector precursor, wherein said interference vector precursor includes an element amplitude for an element having an amplitude that exceeds a threshold and a zero for an element having an amplitude that does not exceed said threshold.

42. (Original) The apparatus of Claim 41, further comprising:

means for performing at least a first fast Walsh transform on said interference vector precursor to obtain an interference vector.

43. (Original) The apparatus of Claim 42, further comprising:

means for storing said interference vector.

44. (Original) The apparatus of Claim 42, further comprising:

means for scaling an interference vector.

45. (Original) The apparatus of Claim 44, further comprising means for combining a plurality of interference vectors to form a composite interference vector.

46. (Previously presented) A receiver device, comprising:

a despreader operable to despread a received signal to produce a despread signal;

a carrier phase recovery module coupled to the despreader;

a fast Walsh transform module operable to perform a selected fast Walsh transform stage on the output of the carrier phase recovery module;

a comparator operable to compare each value output from said fast Walsh transform module to a threshold;

a first memory register operable to store element values output from said comparator as having a value less than said threshold; and

a second memory register operable to store element values output from said comparator as having a value not less than said threshold.

47. (Original) The device of Claim 46, wherein said comparator is additionally operable to output a zero for storing in said first memory register in place of element values having a value greater than said threshold.

48. (Original) The device of Claim 46, wherein said comparator is additionally operable to output a zero for storing in said second memory register in place of element values having a value less than said threshold.

49. (Original) The device of Claim 46, further comprising:

a multiplexer operable to provide said element values stored in said second memory to said fast Walsh transform module, said fast Walsh transform module additionally being operable to perform at least a first fast Walsh transform on said stored element values to obtain an interference vector.

50. (Previously presented) The device of Claim 49, further comprising:

a scaler operable to multiply said interference vector by a selected value.

51. (Original) The device of Claim 50, further comprising a summer operable to add a plurality of scaled interference vectors to obtain a composite interference vector.

52-84 (Cancelled)

85. (Currently amended) A method implemented in a logic circuit configured for:

performing carrier phase recovery on and despreading a received signal to obtain a first set of magnitudes;

performing at least a first fast Walsh transform on said first set of magnitudes, wherein said set of magnitudes contains a number of magnitudes that is equal to a number of chips in a longest valid symbol;

storing a result of said performing at least a first fast Walsh transform in a first register;

comparing each magnitude comprising said result of performing said at least a first fast Walsh transform to a threshold value; and

storing each magnitude of said stored result of performing said first fast Walsh transform that is greater than said threshold value to obtain a first modified result, further configured for:

storing each magnitude comprising said result of performing ~~said~~ an n^{th} fast Walsh transform having a magnitude that is not less than said threshold value in a second register; and

storing a zero for magnitudes comprising said result of performing said n^{th} fast Walsh transform having a magnitude that is less than said threshold value in said second register, wherein said second register comprises a number of magnitudes that is equal to said number of chips in a longest valid symbol, and wherein n is a number of fast Walsh transforms performed.

86. (Previously presented) The method of Claim 85, wherein said storing a zero comprises replacing magnitudes stored in said second register having a magnitude that is not greater than said threshold value with a zero.
87. (Previously presented) The method of Claim 85, wherein said n^{th} fast Walsh transform corresponds to a Walsh code set for symbols of a valid length.
88. (Currently amended) The method of Claim 85, further configured for:

storing said magnitude comprising said result of performing ~~said~~ an $(n-1)^{th}$ fast Walsh transform having a magnitude that is greater than said threshold value in a third register; and

storing a zero for magnitudes comprising said result of performing said $(n-1)^{th}$ fast Walsh transform having a magnitude that is not greater than said threshold value in said third register, wherein said third register comprises a number of magnitudes that is equal to said number of chips in a longest valid symbol.

89. (Previously presented) The method of Claim 88, wherein said $(n-1)^{th}$ fast Walsh transform corresponds to a Walsh code set for symbols of at least a minimum valid length.
90. (Previously presented) The method of Claim 85, wherein said second register comprises a number of values equal to said number of chips in a longest valid symbol.
91. (Previously presented) The method of Claim 88, further configured for:

adding said value in said second register to a product equal to said value in said third register multiplied by 2 to obtain a composite interference vector.

92. (Previously presented) The method of Claim 91, wherein said n^{th} fast Walsh transform corresponds to a Walsh code set for symbols of a maximum valid length.

93. (Previously presented) The method of Claim 91, further configured for:

applying said composite interference vector to a received signal stream to create an interference canceled signal stream.

94-97 (canceled)

98. (Previously presented) A method implemented in a logic circuit configured for:

performing carrier phase recovery on and despreading a received signal to obtain a first set of magnitudes;

performing at least a first fast Walsh transform on said first set of magnitudes, wherein said set of magnitudes contains a number of magnitudes that is equal to a number of chips in a longest valid symbol;

storing a result of said performing at least a first fast Walsh transform in a first register;

comparing each magnitude comprising said result of performing said at least a first fast Walsh transform to a threshold value; and

storing-each magnitude of said stored result of performing said first fast Walsh transform that is greater than said threshold value to obtain a first modified result, wherein n is a number of fast Walsh transforms performed and is equal to log N, where N is the number of valid traffic channels.

99-100. (canceled)